

What is claimed is:

1. A method of managing data access in a communication network using a directory having one or more objects wherein the objects are organized in a hierarchical manner, the method comprising the steps of:
- 5        encapsulating data access information that defines content to be accessed into at least one of the objects in the directory;
- encapsulating network user characteristics that define physical and logical characteristics of network users in at least one of the objects in the directory; and
- 10        enabling a user of the network to perform a data analysis on said data based on the data access information in at least one of the objects in the directory and based on the network characteristics in at least one of the objects in the directory.
2. The method of claim 1, further comprising the step of:
- 15        receiving documents in a markup language from one or more of the network users for storage on a data storage device; and
- encapsulating data formulas that define how to interpret data content of the received markup language documents into at least one of the objects in the directory.
- 20        3. The method of claim 1, wherein there is a directory cache for caching information from the directory and wherein the method further comprises the step of:
- storing at least some of the data access information in the directory cache.
- 25        4. The method of claim 2, wherein the markup language is the eXtensible Markup Language (XML).
5. The method of claim 2, wherein the data formulas includes a style sheet for defining a format for the performed data analysis.
- 30        6. The method of claim 2, wherein the data formulas includes a document type definition (DTD).

7. The method of claim 1, wherein the user characteristics includes the data analysis preferences defined by the network user.
8. The method of claim 2, wherein the received markup language documents  
5 indicates who may access the data.
9. The method of claim 1, wherein the data access information specifies who may access the data.
- 10 10. The method of claim 1, further comprising the step of:  
providing a report generation facility object in the directory to generate reports.
11. The method of claim 1, wherein the network users characteristics  
comprises one of an Internet Protocol (IP) address, a Uniform Resource Identifier (URI),  
15 a Domain Name System (DNS), and a digital certificate.
12. In a distributed network, a method for performing data analytics using a directory  
having one or more objects wherein said objects are organized in a hierarchical manner,  
20 the method comprising the steps of:  
receiving one or more documents in a markup language for the data analysis;  
providing at least one object that defines what the document should contain;  
identifying an originator of the document and a recipient of the document from  
the document;  
25 providing at least one object that defines how the document content is routed to  
other users of the distributed network based on the identified originator and the  
identified recipient;  
providing user preferences that define the other users analytic report preferences;  
selecting data required for the data analytics from the received data based on a  
30 selected other user access privileges; and  
forwarding the selected data to the selected other user for use in the data  
analytics.

13. The method of claim 12, further comprising the step of, providing an analytic report format preference for the selected other user.

5 14. The method of claim 12, wherein the markup language is the eXtensible Markup Language (XML).

15. In a communication network, a method for controlling data distribution to selected users using a directory having one or more objects wherein the objects are  
10 organized in a hierarchical manner, the method comprising the steps of:  
receiving at least one document in a markup language for distribution amongst one or more of the selected users;  
identifying an originator and the selected users from the received document;  
providing at least one object that defines how the document content is routed  
15 through the distributed network based on the identified originator and the selected users;  
selecting the document content from the document that is available for the selected users; and  
forwarding the selected document content to the selected users for data analytics.

20 16. The method of claim 15, wherein at least one of the objects in the directory defines the data format of the markup language document.

17. The method of claim 15, wherein at least one of the objects in the directory defines data content of the markup language document.

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18. The method of claim 15, wherein at least one of the objects in the directory defines the selected user's analytic report format.

19. In a communication network, a method for providing a directory having a  
30 plurality of objects and said objects being organized in a hierarchical manner for controlling access to data, comprising the steps of:

receiving data in a homogenous format from a plurality of network users for processing and storage;

identifying data content a selected user may access;

and

forwarding the identified data to the selected user of the communication network.

- 5     20.     An apparatus in a communication network having a directory to control data access and said directory having one or more objects, wherein the objects are organized in a hierarchical manner to control the data access in the communication network, said apparatus comprising:

10             a storage device to host said directory, wherein said directory includes at least one of the objects being an object class that contains one or more objects with one or more attributes that define data access information for a network user, and at least one of the objects being an object class that contains one or more objects with one or more attributes that define network user characteristics for the network user.

- 15     21.     The apparatus of claim 20, wherein the data access information specifies which data the network user may access and a format for viewing the accessed data.

22.     The apparatus of claim 20, wherein the user characteristics specifies physical and logical properties of the network users.

- 20     23.     The apparatus of claim 20, further comprising an access mechanism that supports receipt of documents in a markup language from the network users.

24.     The apparatus of claim 23, wherein the markup language is the eXtensible Markup Language (XML).

25     25.     The apparatus of claim 20, further comprising a directory cache for caching information from the directory.

- 30     26.     The apparatus of claim 23, further comprising at least one of the objects being an object class that contains one or more objects with one or more attributes that define one or more data formulas that define how to interpret the data in the received markup language documents.

27. The apparatus of claim 26, wherein the data formulas include style sheets and document type definitions.
- 5 28. The apparatus of claim 20, wherein the network user characteristics comprises one of an Internet Protocol (IP) address, a Uniform Resource Identifier (URI), a Domain Name System (DNS), and a digital certificate.
29. The apparatus of claim 20, further comprising a report generation facility object  
10 class in the directory to generate reports.
30. The apparatus of claim 20, wherein the network of user characteristics comprise the network user's data analysis preferences.
- 15 31. The apparatus of claim 23, wherein the access mechanism is an application programming interface.
32. In a distributed system, a directory having a plurality of objects, wherein said objects are organized in a hierarchical manner for managing data access within the  
20 distributed system, a computer readable medium holding computer executable instructions for performing a method, the method comprising the steps of:
- encapsulating data access information that defines the data authorized for access in at least one of the objects in the directory;
- encapsulating system user characteristics that define physical and logical  
25 characteristics of system users in at least one of the objects in the directory; and
- enabling a user of the system to access the data based on the data access information and the system user characteristics to perform a data analysis on said data authorized for access.
- 30 33. The computer readable medium of claim 32, wherein there is a directory cache for caching information from the directory and wherein the method further comprises storing at least some of the data access information in the directory cache.

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